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CAGCGGTTATTCCGGATATCCCCGTGGCGATGATGTTAGGTAGGTTACCACAACTTGC
TGCGAACCCAAGGGTTAAAGGGTAGAGCTGGCTAGATTTTCCAACACTGTATCATGTACC
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GNNGGCTGCGAAGAGNATTAGATTTATTTCTTGCGANTGCNANNNNTANTTTGTTGCATC
CGTTATGGTCATGAAAAAATTGCTAACGACACACATAAACGATGGAGCAAATT

Figure 1A

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TTATTCCGGATATCCCCGTGGCGATGATGTTAGAGAATCAATGGCTGCACCCGAAGATCT
GCCAGGCGAGAGGCAACCGGAGACACCCACGGCGGAAGCTGTAAAACAGGCAGCGGCAA
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ACTACCACGTGAAGAAAGCGACAATGAAAGGCTTTGACGTTGCAAAAGACCAGTCGTATA
AGGGCTACTTGGCCGTCAGGAAAGCCACAGCTAAGGGCCTGCAGAGCGCTGGCAAGAGC
CTTGAGCTTAAAGAGTCGGCACCGACAGGCACTACGACTGCGGCGCCGACTGAAAAAGT
GCCCCCCAGTGGCCCGTGATCAGGTGAAGTTCAACGTACTCGTAAGGAGCAAAATGACGT
GCAGCAAACCGCAGAGATGTTGGCTGAGGAAATTCTTGAGGCTGGGCTTAAGAAGGACG
ATGGAGAAGGACGGGGAACGCCAGAAGCTGAAGTCAATTAA

Figure 1B

MFTGKRWILVVAVGALVGASVKAADFSGRGTVNGQPVGSGYSGYPRGDDVRESMAAPEDLP
GERQPETPTAEAVKQAAAKAYRLLKQFTAKVGQETENAYYHVKKATMKGFDVAKDQSYKG
YLAVRKATAKGLQSAGKSLELKESAPTGTTTAAPTEKVPPSGPRSGEVQRTRKEQNDVQQTA
EMLAEEILEAGLKKDDGEGRGTPEAEVN

Figure 1C

```
NC      1 MFTGKRWILVVAVGALVGASVKAADFSGRGTVNGQPVGSGYSGYPRGDDV 50
          ||..|: :||||||||..||:||:||  |.||..||: .:|| | :: .
TG      1 MFAVKHCLLVVAVGALVNVSVRAAEFS..GVVNQGPVDVPFSGKPLDERA 48

     51 RESMAA.PEDLPGERQ..PETPTAEAVKQAAAKAYRLLKQFTAKVGQETE 97
          ::.:. ...||:|||  ||.|..: ....|.. :| : .|...||:..|
     49 VGGKGEHTPPLPDERQQEPEEPVSQRASRVAEQLFRKFLKFAENVGHHSE 98

     98 NAYYHVKKATMKGFDVAKDQSYKGYLAVRKATAKGLQSAGKSLELKESAP 147
        .|: ..| .. |||..||.:. :|: ..:.|.::|: ..||.|.  ||..
     99 KAFKKAKVVAEKGFTAAKTHTVRGFKVAKEAAGRGMVTVGKKLANVESDR 148

    148 TGTTTAAPTEKVPPSGPRSGEVQRTRKEQNDVQQTAEMLAEEILEAGLKK 197
        ..|||.||.   .|.|  ..||      . :.|| |. :: . :..
    149 STTTTQAPD...SPNGLAETEV......PVEPQQRAAHVPVPDFSQ.... 186
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Figure 2

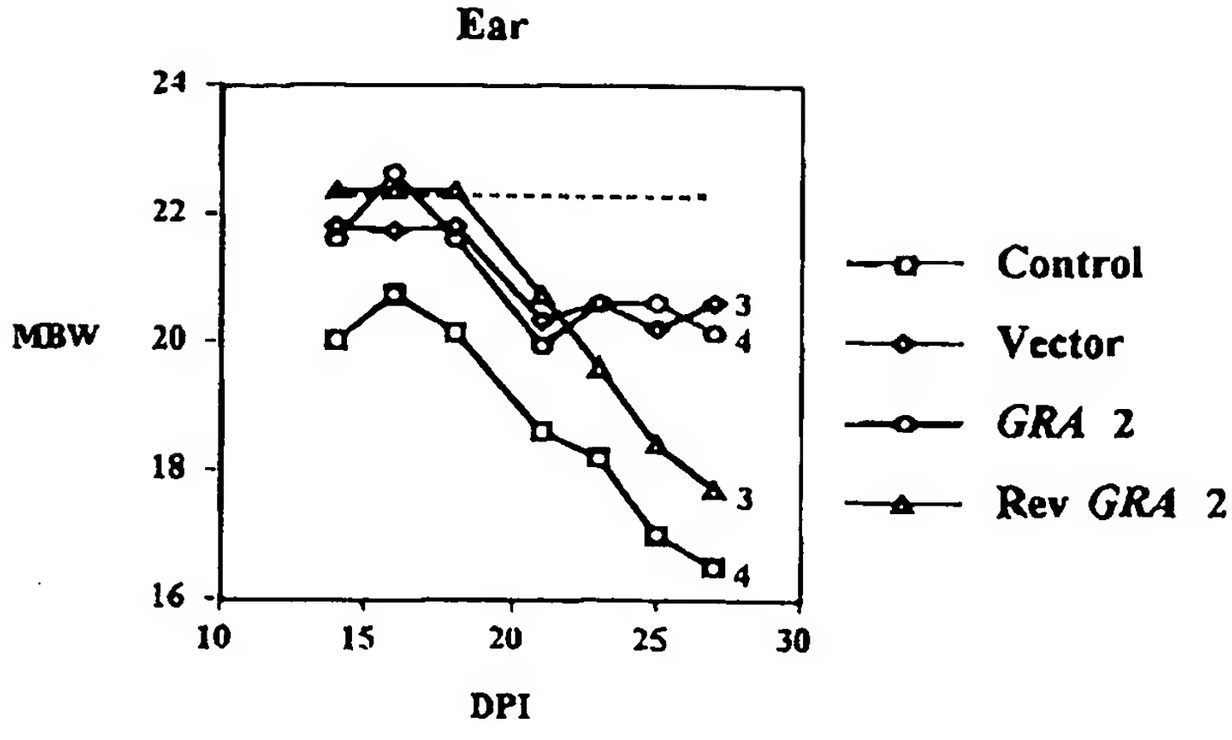
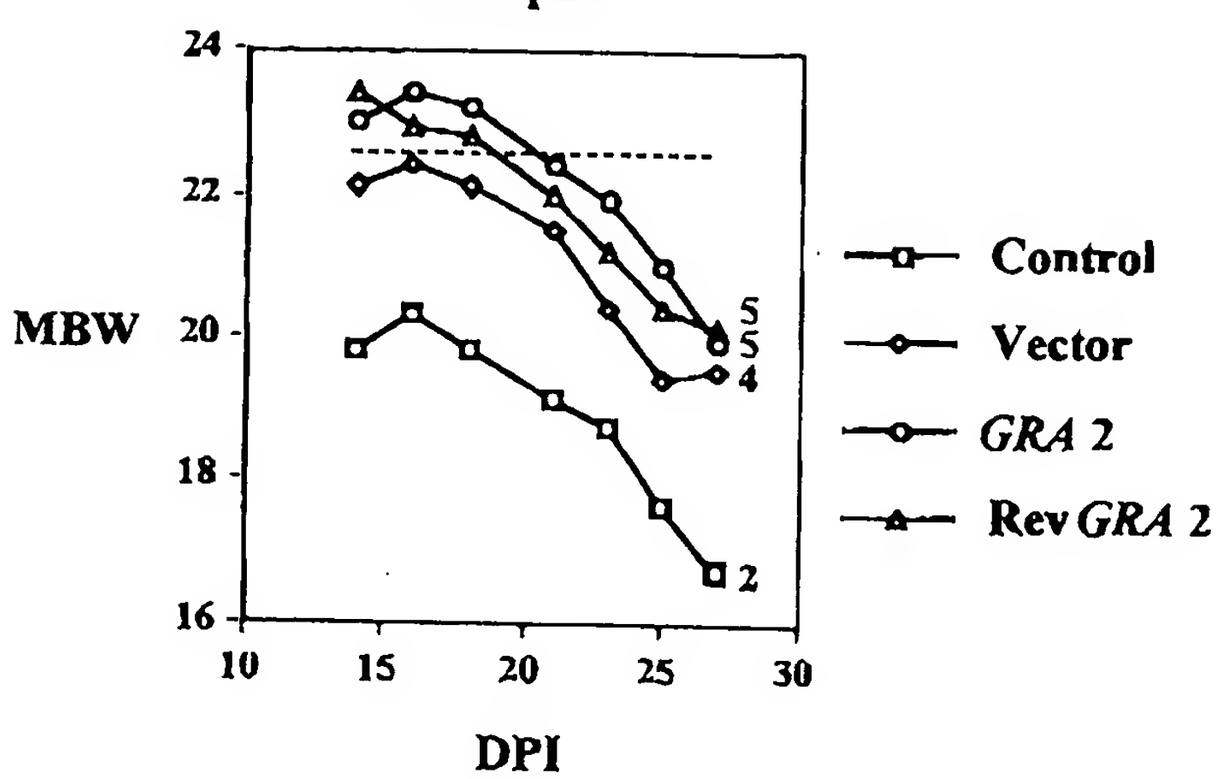

Ear
24
22
20
18
16
MBW
10
15
20
25
30
DPI
3
4
3
4
Control
Vector
GRA 2
Rev GRA 2

Figure 3


Footpad
MBW
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22
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16
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15
20
25
30
DPI
5
5
4
2
Control
Vector
GRA 2
Rev GRA 2

Figure 4

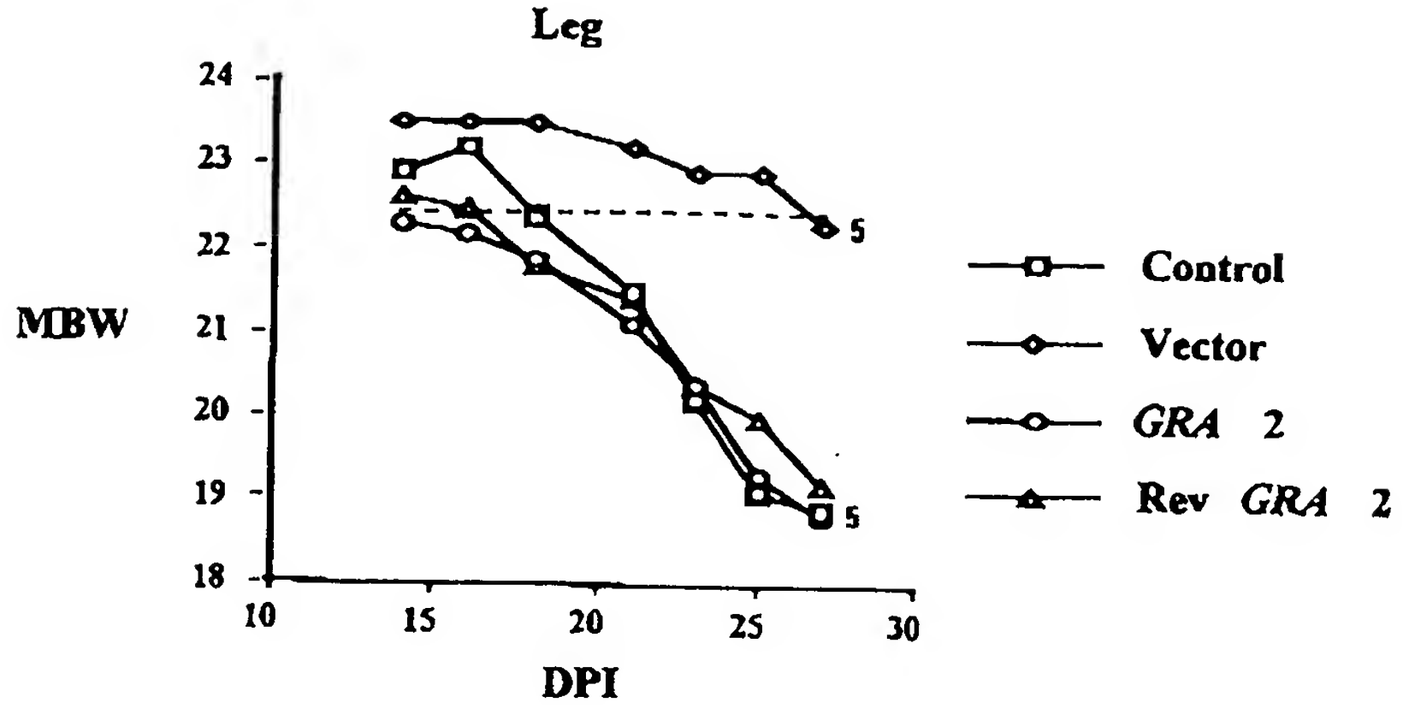
Leg
MBW
24
23
22
21
20
19
18
10
15
20
25
30
DPI
5
5
Control
Vector
GRA 2
Rev GRA 2

Figure 5

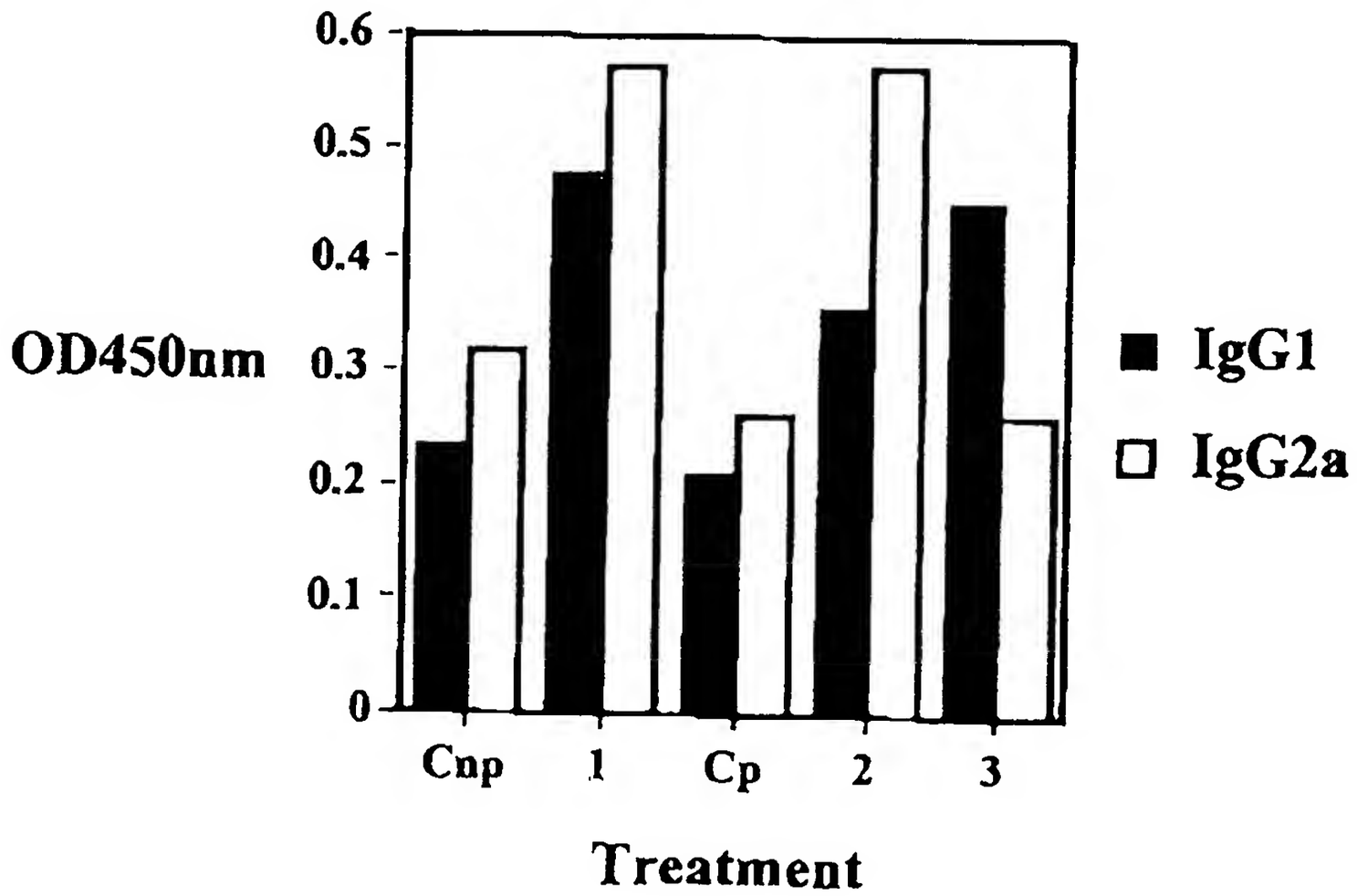
ELISA using NcGra2
OD450nm
0.6
0.5
0.4
0.3
0.2
0.1
0
Cnp
1
Cp
2
3
Treatment
IgG1
IgG2a

Figure 6

AATTCGGCACGAGTTTTTCGTCATTTCCCTTGTAAGCTGTGTCAAGCCGTTTTTAGAA
CCAATAAAGCCTATCTCTGCGTAGGCATTCTTCTTTTTTGCAGTAGAGGCTTCTATTT
CACTGAACCATTGTGCCTTCGCTACCGGACGGGTGCGTAGTTTGAGTCGTAACCGGG
GCTCAACCGTGGCAGTCCGCTGTTTTGCGGATACGCTGTCATTGTGGTCCTTTCGTTC
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GGCATGTACAAGCAAGCCTACCCTTACACAGCGTATCCATACGGTGTTCCGCGC
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GTACGCTTACTAAGCTTCCTGGCCTCGTCGTTTGGCTGTGGTCCATCCTCTACAAACT
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Figure 7

MDPKVESQTNVPSGAEAEQPKAGEAQATVENGNTSAPDAQVKSQASSEDV
VAQSSEDFSGKLQANSGIVSFGDSAAGSGAFNSMDVQNFLQRYATSKMFG
VPPHFFQSRESLRVWGADHLTDPMVQPYEKDDQNLPNPFHVSLPGYSPSL
CKYVLTKGEKPPRDPLLGPEITIYPPTWIPHWEPDPNFKPQAYNFNWEEN
GTFQMERLPYAKAVFDPADGSAHGMYKQAYPYTAYPYGVPRV

Figure 8A

MDVQNFLQRYATSKMFGVPPHFFQSRESLRVWGADHLTDPMVQPYEKDDQ
NLPNPFHVSLPGYSPSLCKYVLTKGEKPPRDPLLGPEITIYPPTWIPHWEPDPN
FKPQAYNFNWEENGTFQMERLPYAKAVFDPADGSAHGMYKQAYPYTAYP
YGVPRV

Figure 8B

TAAGCTGTGTCAAGCCGTTTTTAGAACCAATAAAGCCTATCTCTGCGTAG
GCATTCTTCTTTTTTGCAGTAGAGGCTTCTATTTCACTGAACCATTGTGCC
TTCGCTACCGGACGGGTGCGTAGTTTGAGTCGTAACCGGGGCTCAACCGT
GGCAGTCCGCTGTTTTGCGGATACGCTGTCATTGTGGTCCTTTCGTTCATT
TTCGTGATTTCCTTCCCTTGTAGTGACTTCCTCGGCACTCTGCCTTTAGTT
AACGTTTAAAATTCAGCTTTGTTGTCGCGACTGCATTCCAATAGTCCAGG
AAGAGATTTGTGCACGTGGCGGACCGAGCCAGCGACCTCGTGGAGGCTT
GACGTGACGTGCAGCAGCAAGAGGCAAGAGAAGGTGCGTGCGCCGCCCA
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CCCGTGCAACTATATTTGAAGGAAACATGGATCCTAAAGTGGAGAGTCA
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AGGCACAAGCAACTGTGGAGAACGGTAATACTTCAGCTCCGGATGCT
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CGTATGTAAAAGTCCCGGGTCAGCTTGAGGTAGTCGATATCAGTGAGACA
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AAAACCTGTTTTATTCA

Figure 9

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GCGCTCCGAAGACTAGACCAAAAGGAAACTGTCCAGGCTTTAGTGGAACAGCACAGGTTT
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CAGCTTTTGAAGCAGAGACGGAAAGAAAATGAAGAGAGGAACCGCGTGAAGCGAAACAGC
GATGACGTCATGGCGGAGCTCAAGCAGAAACTCGCGGCCCGCAAGAAGGCAATGTAG

Figure 10

MALSTMNKPGPFRRLLGYGLLLGAVVLEAAFDLSAPAEAVALRRLDQKET
VQALVEQHRFSNDYDQEAEYRRRRQELGSQTPEEIEEAKRKYRKQVLKEQ
QEDEELKKKTDAVIEELKKTAEERGLRRYPERDEDRTDDQQMDFETRQRE
LRNMDSATKAQLLKQRRKENEERNRVKRNSDDVMAELKQKLAARKKAM

Figure 11A

MALSTMNKPGPFRRLLGYGLLLGAVVLEAAFDLSAPAEAVALRRLDQKET
VQALVEQHRFSNDYDQEA

Figure 11B

ALSTMNKPGPFRRLLGYGLLLGAVVLEAAFDLSAPAEAVALRRLDQKET
VQALVEQHRFSNDYDQEAEYRRRRQELGSQTPEEIEEAKRKYRKQVLKEQ
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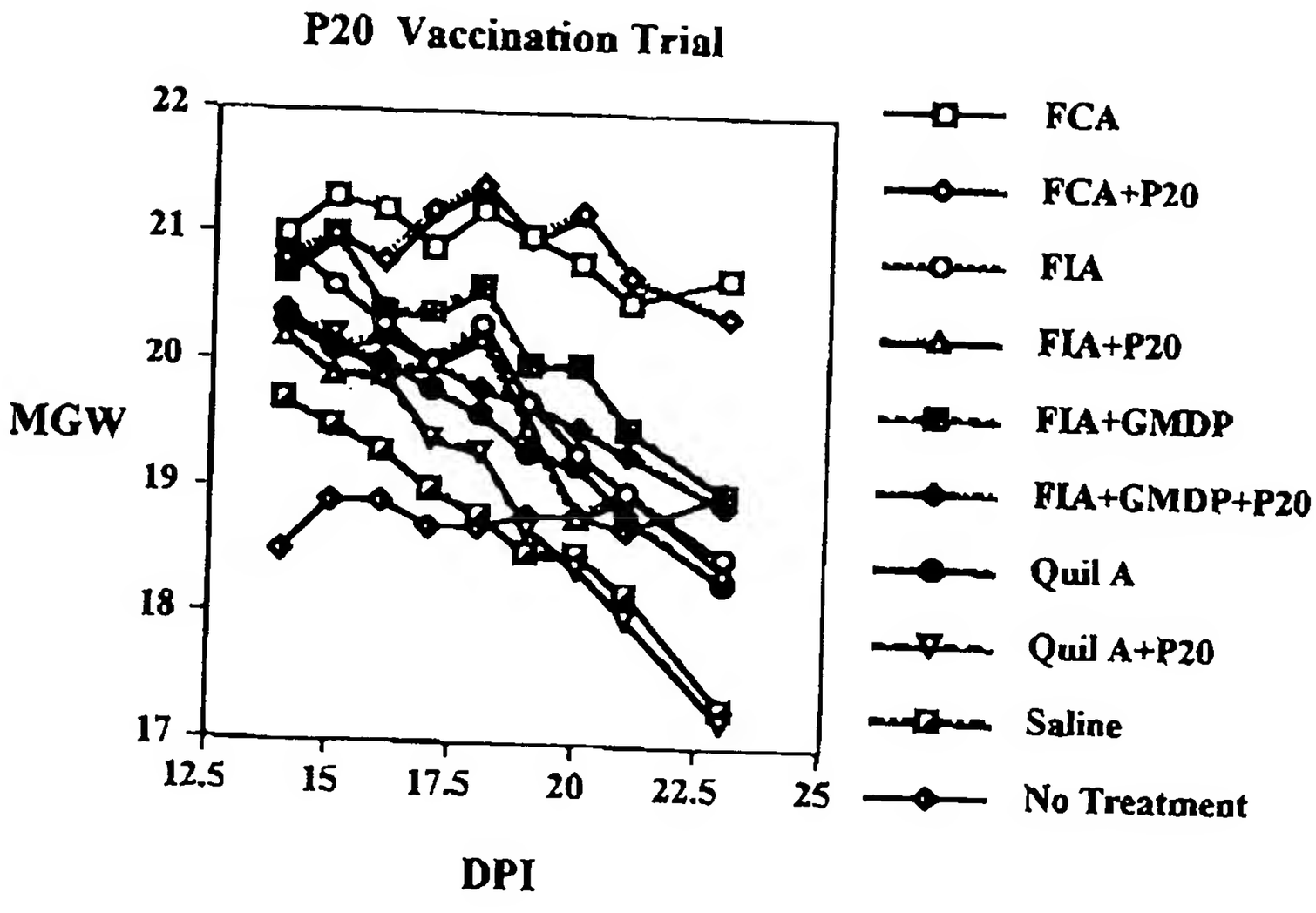
LRN

Figure 11C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MGW
DPI
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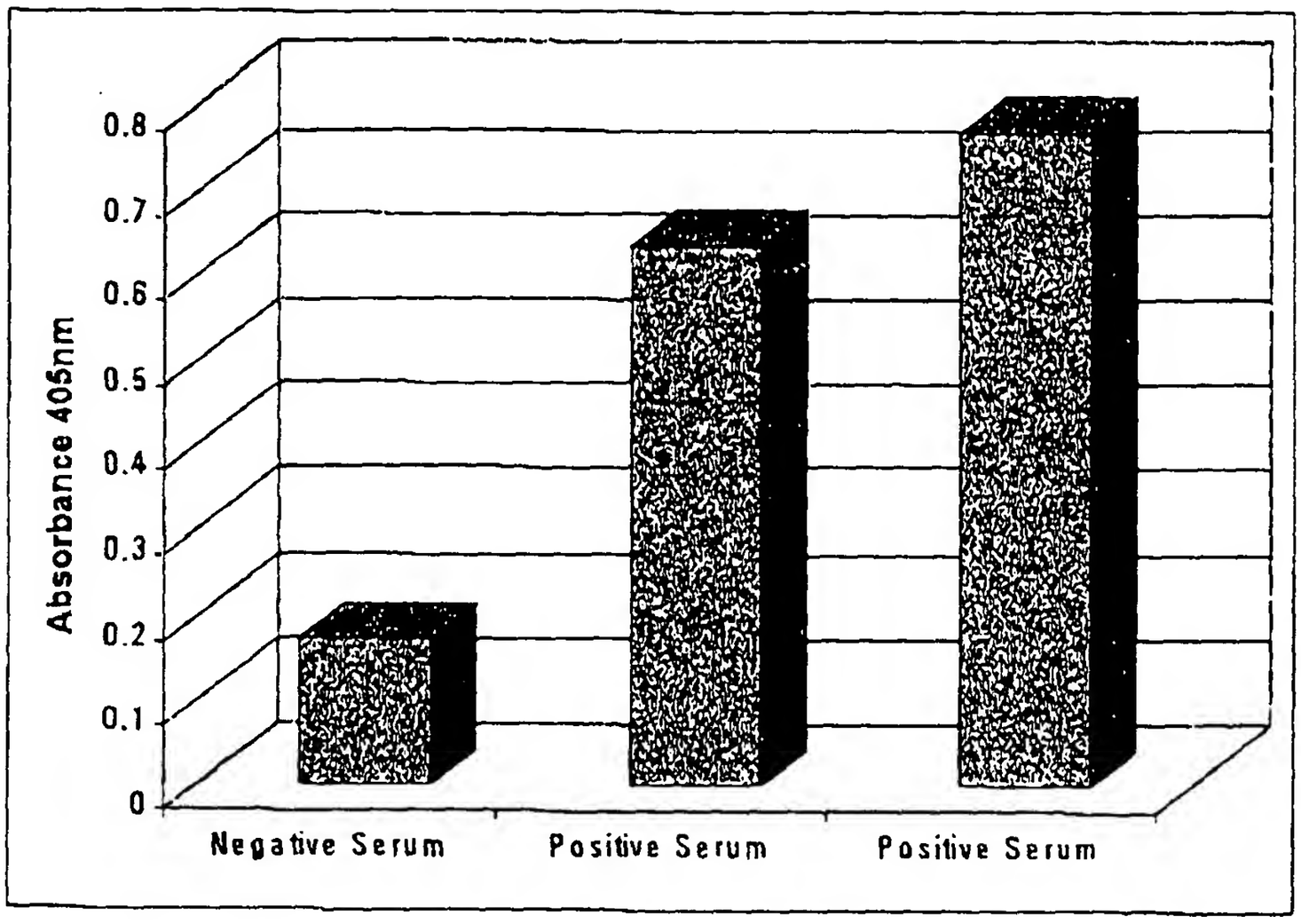
21
20
19
18
17
12.5
15
17.5
20
22.5
25
FCA
FCA+P20
FIA
FIA+P20
FIA+GMDP
FIA+GMDP+P20
Quil A
Quil A+P20
Saline
No Treatment

Figure 12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0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Negative Serum
Positive Serum
Positive Serum

Figure 13